

## ABSTRACT

Disclosed is a soft magnetic Co-based metallic glass alloy with high glass forming ability, which has a supercooled-liquid temperature interval ( $\Delta T_g$ ) of 40 K or more, a reduced 5 glass-transition temperature ( $T_g / T_m$ ) of 0.59 and a low coercive force of 2.0 A/m or less. The metallic glass alloy is represented by the following composition formula:  $[Co_{1-n-(a+b)} Fe_n B_a Si_b]_{100-\chi} M_\chi$ , wherein each of a, b and n represents an atomic ratio satisfying the following relations:  $0.1 \leq a \leq 0.17$ ;  $0.06 \leq b \leq 0.15$ ;  $0.18 \leq a+b \leq 0.3$ ; and  $0 \leq n \leq 0.08$ , M representing one or more elements selected from the group consisting of Zr, Nb, Ta, Hf, Mo, Ti, V, Cr, Pd and 10 W, and  $\chi$  satisfying the following relation:  $3 \text{ atomic\%} \leq \chi \leq 10 \text{ atomic\%}$ . The present invention overcomes restrictions in preparing a metallic glass bar with a thickness of 1 mm or more from conventional Co-Fe-B-Si-based metallic glasses due to their poor glass forming ability, and provides an excellent Co-Fe-B-Si-based metallic glass allowing the formation of bulk metallic 15 glass, which serves as a key technology for achieving a broader application fields of metallic glass products.